IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant(s)	:	Michael D. Brookshire
Serial Number	:	10/671,842
Date of Filing	:	September 25, 2003
Title	:	*CELEBRATION DIAMOND HAVING DOME-SHAPED CROWN WITH PAVILION*
Confirmation No.	:	9648
Art Unit	:	3677
Examiner	:	Reese, David C.
USPTO Customer No.	:	26707
Attorney Docket No.	:	121236.00003 CIP

AMENDED APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the notice of non-compliant appeal brief mailed April 4, 2007, Appellant(s) submit the following amended Appeal Brief under 37 C.F.R. § 41.37 appealing the Final Rejection from the USPTO dated September 29, 2006.

I. REAL PARTY IN INTEREST

OMNICE LLP, an Arizona limited liability partnership, having a principal place of business at 6900 East Camelback Road, Suite 950, Scottsdale, Arizona 85251, is the real party in

interest of the present application. An assignment of all rights, title, and interest in the present application to OMNICE LLP was executed by Brookshire Diamond Designs, LLC, and recorded by the U.S. Patent and Trademark Office at reel 017789, frame 0235.

II. RELATED APPEALS AND INTERFERENCES

Appellant currently has an appeal pending for related application number 10/613,281. There are no interferences pending related to the present application.

III. STATUS OF CLAIMS

The present application contains thirty-six pending claims. Claims 40 and 47-48 have been finally rejected under 35 U.S.C. 102(b) as being anticipated by US patent D370642 (Stafford). Claims 41, 44-46, 49-51, and 54 have been finally rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford. Claims 1, 3-5, 13-16, 23-25, and 55-56 have been finally rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford. Claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 have been finally rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford in view of US patent D443244 (Almaraz).

A copy of claims 1, 3-5, 7, 8, 10, 13-16, 18-19, 21, 23-25, 27, 28, and 40-56, the claims on Appeal, is enclosed in the Claims Appendix.

IV. STATUS OF AMENDMENTS

A total of 39 claims were filed with the original application on September 25, 2003. In an Office Action dated June 29, 2005, claims 1-39 were subject to a restriction requirement under 35 U.S.C. 121. Appellant elected claims 1-31 and 36-39 drawn to a diamond. Appellant withdrew from consideration in the present application claims 32-35 drawn to a method of cutting a gemstone.

In a non-final Office Action dated August 25, 2005, the Examiner further withdrew claims 6, 12, 17, 26, and 32-39. The Examiner rejected claims 1, 3-5, 13, 16, and 23 under 35 U.S.C. 102(b) as being anticipated by US patent 250378 (Meyer). Claims 2-3, 14-15, and 24-25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of US patent 5657647 (Freiesleben). Claims 7, 18, and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer. In response to the Office Action, Appellant amended claims 1, 8, 10, 13, 19, 21, 23, 28, and 30, and cancelled/withdrew claims 2, 6, 9, 11, 12, 17, 20, 22, 26, 29, and 31-39.

In a Final Office Action dated April 5, 2006, the Examiner rejected claims 1, 5, 13-14, 17, 23-24, and 26 under 35 U.S.C. 102(b) as being anticipated by Stafford. The Examiner rejected claims 3-4, 15-16, and 25 under 35 U.S.C. 103(a) as being unpatentable over Stafford in view of case law. The Examiner rejected claims 7-8, 10, 18-19, 20, 27-28, and 30 under 35 U.S.C. 103(a) as being unpatentable over Stafford in view of Almaraz.

On August 1, 2006, Appellant filed a Request for Continued Examination and Preliminary Amendment in response to the Final Office Action. Appellant amended claims 1, 7, 8, 10, 13, 21, 23, 27, and 28.

In an Office Action dated August 14, 2006, the Examiner rejected claims 13-16 and 23-25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford. The Examiner rejected claims 18-19, 21, 27-28, and 30 under 35 U.S.C. 103(a) as being unpatentable over Stafford in view of Almaraz. In response to the Office Action, Appellant amended claims 1, 3, 13, and 23, and added claims 40-56.

In a Final Office Action dated September 29, 2006, claims 40 and 47-48 were finally rejected under 35 U.S.C. 102(b) as being anticipated by Stafford. Claims 1, 3-5, 13-16 and 23-25, 41, 44-46, 49-51, and 54-56 were finally rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford. Claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 were finally rejected under 35 U.S.C. 103(a) as being unpatentable over Stafford in view of Almaraz.

Appellant have made no further amendments to the claims. Appellant filed the present appeal brief in response to the Final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In the present invention, a dome-shaped crown (22) is cut into the diamond rough as a plurality of rows or sets of facets (40). The rows or sets of facets have monotonically decreasing angles to form a generally curved contour from the girdle (26) to the apex of the crown. The dome-shaped crown, especially in the

case of a precious gemstone, provides a fluid balance of light return from the numerous angles. The dome-shaped crown allows more light to received and reflected by the gemstone, thus providing greater the brilliance and scintillation.

With respect to claim 1, the present invention is a diamond comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found in paragraphs [00017] and [00022] of the specification and FIG. 2. Each of the plurality of facets has a continuous flat surface extending from the girdle to the culet. An edge of a first adjoining facet contacts an edge of a second adjoining facet along a common radial boundary, see paragraph [00023]. A dome-shaped crown (22) is disposed above the girdle, see paragraph [00024]. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, see paragraph [00029]. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, as found in paragraphs [00025]-[00030]. Each of the sets of facets has monotonically decreasing surface area from the girdle to the apex of the dome-shaped crown, see paragraph [00029]. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets, as found in paragraph [00030] of the specification.

With respect to claim 13, the present invention is a cut gemstone comprising a pavilion (24) extending from a girdle (26) to a culet (34), as found in paragraphs [00017] and [00022] of

the specification and FIG. 2. The girdle extends no further than a widest circumference of the crown. The pavilion extends no further than a widest circumference of the girdle. A crown (22) in the form of a symmetrical hemisphere is formed from at least five sets of facets (40) between the girdle and an apex of the crown including a first set of facets disposed above the girdle and a second set of facets disposed between the first set of facets and an apex of the crown, see paragraph [00024]. The first set of facets is cut at a first angle with respect to a reference line which is tangential to the apex of the crown. The second set of facets is cut at a second angle with respect to the reference line which is less than the first angle. Each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, as found in paragraphs [00025]-[00030].

With respect to claim 23, the present invention is a cut gemstone comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found in paragraphs [00017] and [00022] of the specification and FIG. 2. A dome-shaped crown (22) is disposed above the girdle, see paragraph [00024]. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, as found in paragraphs [00025]-[00030].

With respect to claim 40, the present invention is a cut gemstone comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found in paragraphs [00017] and [00022] of the specification and FIG. 2. A dome-shaped crown (22) is disposed above the girdle, see paragraph [00024]. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is polygonal in shape with opposing corners of the polygon nested between adjacent facets, as found in paragraphs [00025]-[00030].

With respect to claim 47, the present invention is a diamond comprising a pavilion (24) having a plurality of facets (32) disposed from a girdle (26) to a culet (34), as found in paragraphs [00017] and [00022] of the specification and FIG. 2. A dome-shaped crown (22) is disposed above the girdle, see paragraph [00024]. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets (40) cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, as found in paragraphs [00025]-[00030].

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 40 and 47-48 are anticipated under 35 U.S.C. 102(b) by Stafford.

2. Whether claims 1, 3-5, 13-16, 23-25, 41, 44-46, 49-51, and 54-56 are unpatentable under 35 U.S.C. 103(a) over Stafford.

3. Whether claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 are unpatentable under 35 U.S.C. 103(a) over Stafford in view of Almaraz.

VII. ARGUMENT

A. Note on drawings

The Final Office Action dated September 29, 2006, objected to the drawings under 37 C.F.R. 1.83(a). The Examiner states that the drawings do not show the apex of the dome-shaped crown as having less surface area than each facet from the sets of facets. Appellant respectfully traverses the objection. FIG. 8 shows apex 104 as having less surface area than each facet from the sets of facets.

B. Legal standard for anticipation under 35 U.S.C. 102(b)

Under 35 U.S.C. 102, "a person shall be entitled to a patent unless (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by

the applicant for patent, or (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States." Therefore, a claim is anticipated if every element recited in the claim can be found in a single prior publication, patent, or invention, either explicitly or inherently. See Glaxo Inc. v. Novopharm Ltd., 52 F.3d 1043, 1047 (Fed. Cir. 1995). If the reference fails to suggest, either explicitly or inherently, even one limitation of the claimed invention, then the claim is not anticipated. Atlas Powder Co. v. E.I. du Pont De Nemours & Co., 750 F.2d 1569, 1574 (Fed. Cir. 1984). To be anticipatory based on inherency, it must be clear that the missing descriptive matter is present and would be recognized by persons of ordinary skill in the art. Continental Can Co., U.S.A. v. Monsanto Co., 948 F.2d 1264 (Fed. Cir. 1991).

C. Claims 40 and 47-48 are novel over Stafford

1. Claim 40

Claim 40 recites a cut gemstone comprising a pavilion having a plurality of facets disposed from a girdle to a culet. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

Each facet within the sets of facets is polygonal in shape with opposing corners of the polygon nested between adjacent facets.

The dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown is a fundamental distinction between the claimed invention and the prior art of record. In the case of Stafford, the reference does not teach or suggest at least the feature of the dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. In other words, the shape of Stafford's gemstone is not cut with a curved contour in accordance with a dome shape. Stafford discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 40.

In contrast, Appellant's invention provides sufficient facets to form a curved contour into a dome shape, see FIGs. 5 and 8. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. The curved contour is important to the invention in that it yields a fluid balance of light return from the numerous angles. The dome-shaped crown allows more light to be received and reflected by the gemstone, thus providing greater the brilliance and scintillation, see paragraph [00036].

Claim 40 is believed to patentability distinguish over Stafford because the prior art reference does not have a dome-shaped crown formed from a plurality of sets of facets cut with

monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

2. Claims 47 and 48

Claim 47 recites a diamond comprising a pavilion having a plurality of facets disposed from a girdle to a culet. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

The Stafford reference does not teach or suggest at least the feature of a dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. The shape of Stafford's gemstone is not cut with a curved contour in accordance with a dome shape. Stafford discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 47.

In contrast, Appellant's invention provides sufficient facets to form a curved contour into a dome shape, see FIGs. 5 and 8. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. The curved contour

is important to the invention in that it yields a fluid balance of light return from the numerous angles. The dome-shaped crown allows more light to be received and reflected by the gemstone, thus providing greater the brilliance and scintillation, see paragraph [00036].

Claim 47 is believed to patentability distinguish over Stafford because the prior art reference does not have a dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Claim 48 is believed to be in condition for allowance as it is dependent from an allowable base claim.

D. Legal standard for patentability under 35 U.S.C. 103(a)

Section 103(a) of Title 35 provides a standard for patentability of the claimed invention. Under 35 U.S.C. 103, a patent may not be obtained though the invention is not identically disclosed or described as set forth in 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject pertains. Therefore, even if all of the claim elements cannot be found in a single prior art reference or device, the claim may still be unpatentable if the differences do not meet a minimum standard of inventiveness.

To evaluate patentability under Section 103(a), the scope and content of the prior art are to be determined, differences

between the prior art and the claims at issue are to be ascertained, and the level of ordinary skill in the pertinent art resolved. *Graham v. John Deere Co.* 383 U.S. 1 (1966). In considering the legal standard of obviousness, certain secondary considerations such as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to in order to establish a *prima facie* case of obviousness: (i) the claimed invention must be considered as a whole; (ii) the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (iii) the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (iv) reasonable expectation of success is the standard with which obviousness is determined. *Hodosh v. Block Drug Co., Inc.,* 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986); *In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Obviousness can only be established through combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab,* 217 F.3d 1365, 1370, 55 USPQ2d

1313, 1317 (Fed. Cir. 2000). See also *In re Lee,* 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine,* 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones,* 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills,* 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The determination of the level of ordinary skill in the art is an integral part of the Graham analysis. See Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc., 807 F.2d 955, 962 ("Without [a determination of the level of ordinary skill in the art], a district court cannot properly assess obviousness because the critical question is whether a claimed invention would have been obvious at the time it was made to one with ordinary skill in the art."). Factors that may be considered in determining the ordinary level of skill in the art include: (1) the types of problems encountered in the art; (2) the prior art solutions to those problems; (3) the rapidity with which innovations are made; (4) the sophistication of the technology; and (5) the educational level of active workers in the field. See Id. at 962 (citing Envtl. Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 697 (Fed. Cir. 1983)). "Not all such factors may be present in every case, and one or more of them may predominate." Id.

E. Claims 1, 3-5, 13-16, 23-25, 41, 44-46, 49-51, and 54-

56 are patentable over Stafford

1. Claims 1 and 3-5

Claim 1 recites a diamond comprising a pavilion having a plurality of facets disposed from a girdle to a culet. Each of the plurality of facets has a continuous flat surface extending from the girdle to the culet. An edge of a first adjoining facet contacts an edge of a second adjoining facet along a common radial boundary. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. Each of the sets of facets has monotonically decreasing surface area from the girdle to the apex of the dome-shaped crown. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

Appellant agrees with the Examiner that Stafford does not disclose a dome-shaped crown formed from at least five sets of facets. Moreover, Appellant agrees with the Examiner that Stafford does not disclose an apex of a dome-shaped crown having less surface area than each facet from the sets of facets. Finally, Appellant agrees that Stafford does not teach or suggest a gemstone wherein each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon

nested between adjacent facets. However, Appellant disagrees that it would be obvious to add more facets to Stafford to achieve the dome-shaped crown, or to change the size and shape of the facets or apex of the crown. Furthermore, Appellant generally disagrees with the Examiner that Stafford discloses a dome-shaped crown, at least not one formed with a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater the brilliance and scintillation, see paragraph [00036]. Claim 1 recites at least five sets of facets (the specification discloses eleven sets of facets), see paragraph [00027]-[00029]. In any case, the number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape. That is, the large number of rows of facets is necessary to yield the dome-shaped crown. In addition, the apex of the dome-shaped crown has less surface area than each facet from the sets of facets in order to form the dome shape capable of receiving and reflecting more light.

Appellant maintains that Stafford's gemstone is not dome-shaped with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Stafford discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 1. The additional sets of facets recited in claim 1, over and above what is shown in Stafford, go toward forming the curved contour in accordance with its dome

shape. Stafford does not use an apex of a dome-shaped crown that has less surface area than each facet from the sets of facets. The top of the gemstone in Stafford is a table-top with a surface area larger than the adjacent facets. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape.

Appellant further believes that Stafford's gemstone does not show each facet within the first and second sets of facets as hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. Stafford's facets are rectangular, not hexagonal, and cannot be reasonably viewed as having opposing corners of the hexagon nested between adjacent facets.

The Examiner states that change in number and shape of facets merely alters the aesthetics of the gemstone and would thus be obvious over Stafford. Appellant disagrees. The larger number of facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets in order to create the dome-shape. The dome-shape is functional to achieve the fluid balance of light return from the numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. The hexagonal-shaped facets with opposing corners of the hexagon nested between adjacent facets add to the light angles and light return. It is the totality and utility of these functional aspects of the dome-shaped crown that allow more light to be received and reflected by the gemstone, thus providing greater the brilliance and scintillation, see paragraph [00036].

Appellant's invention as recited in claim 1 is believed to be significantly different from the Stafford reference. The Examiner acknowledges that Stafford does not show all features of claim 1. Appellant believes the Examiner is taking judicial notice by failing to produce any prior art reference that demonstrates how the differences between claim 1 and Stafford would be obvious. Claim 1 recites sufficient facets and an apex which has less surface area than each facet from the sets of facets to form a curved contour into a dome shape, see also FIGs. 5 and 8. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. Claim 1 further recites hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets. Stafford simply does not have these features.

Accordingly, claim 1 is believed to patentably distinguish over Stafford. Claims 3-5 are believed to be in condition for allowance as each is dependent from an allowable base claim.

2. Claims 13-16 and 55

Claim 13 recites a cut gemstone comprising a pavilion extending from a girdle to a culet. The girdle extends no further than a widest circumference of the crown. The pavilion extends no further than a widest circumference of the girdle. A crown in the form of a symmetrical hemisphere is formed from at least five sets of facets between the girdle and an apex of the crown including a first set of facets disposed above the girdle and a second set of facets disposed between the first set of facets and an apex of the crown. The first set of facets is cut

at a first angle with respect to a reference line which is tangential to the apex of the crown and the second set of facets is cut at a second angle with respect to the reference line which is less than the first angle. Each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

Appellant disagrees with the Examiner that Stafford discloses a crown in the form of a symmetrical hemisphere formed from at least five sets of facets between the girdle and an apex of the crown. The gemstone shape in Stafford cannot reasonably be viewed as a symmetrical hemisphere, and certainly is not formed from at least five sets of facets between the girdle and an apex of the crown. Moreover, Stafford does not teach or suggest a gemstone wherein each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

A fundamental aspect of the present invention is its dome-shaped crown in the form of a symmetrical hemisphere. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater the brilliance and scintillation, see paragraph [00036]. Claim 13 recites at least five sets of facets (the specification discloses eleven sets of facets), see paragraph [00027]-[00029]. In any case, the number of rows of facets must be sufficient to form a symmetrical hemisphere. A symmetrical hemisphere is a substantially rounded surface. The large number of rows of facets is necessary to yield the dome-shaped crown as a symmetrical hemisphere capable of receiving and reflecting more light.

Appellant maintains that Stafford's gemstone is not dome-shaped in the form of a symmetrical hemisphere. Stafford

discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a symmetrical hemisphere, as recited in claim 13. The additional sets of facets recited in claim 13, over and above what is shown in Stafford, go toward forming the symmetrical hemisphere. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a symmetrical hemisphere.

Appellant further believes that Stafford's gemstone does not show each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. Stafford's facets are rectangular, not hexagonal, and cannot be reasonably viewed as having opposing corners of the hexagon nested between adjacent facets.

The Examiner states that change in number and shape of facets merely alters the aesthetics of the gemstone and would thus be obvious over Stafford. Appellant disagrees. The larger number of facets is essential to formation of the dome-shaped crown as a symmetrical hemisphere. The dome-shape is functional to achieve the fluid balance of light return from the numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. The hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets add to the light angles and light return. It is the totality and utility of these functional aspects of the dome-shaped crown that allow more light to be received and reflected by the gemstone, thus providing greater the brilliance and scintillation, see paragraph [00036].

Appellant's invention as recited in claim 13 is believed to be significantly different from the Stafford reference. The

Examiner acknowledges that Stafford does not show all features of claim 13. Appellant believes the Examiner is taking judicial notice by failing to produce any prior art reference that demonstrates how the differences between claim 13 and Stafford would be obvious. Claim 13 recites sufficient facets to form a symmetrical hemisphere, see also FIGs. 5 and 8. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the symmetrical hemisphere, see paragraphs [00027]-[00029]. Claim 13 further recites hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets. Stafford simply does not have these features.

Accordingly, claim 13 is believed to patentably distinguish over Stafford. Claims 14-16 are believed to be in condition for allowance as each is dependent from an allowable base claim.

Claim 55 depends from claim 13 and further recites the apex of the crown as having less surface area than each facet from the sets of facets. Stafford does not have an apex of the dome-shaped crown which has less surface area than each facet from the sets of facets. The top of the gemstone in Stafford is a table-top with a surface area larger than the adjacent facets. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets in order to create the dome-shape, which is not found in Stafford.

Accordingly, claim 55 is believed to patentably distinguish over Stafford.

3. Claims 23-25 and 56

Claim 23 recites a cut gemstone comprising a pavilion having a plurality of facets disposed from a girdle to a culet. A dome-shaped crown is disposed above the girdle. The girdle extends no further than a widest circumference of the dome-shaped crown. The pavilion extends no further than a widest circumference of the girdle. The dome-shaped crown is formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Each facet within the sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

Appellant generally disagrees with the Examiner that Stafford discloses a dome-shaped crown, at least not one formed with a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Moreover, Stafford does not teach or suggest a gemstone wherein each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater the brilliance and scintillation, see paragraph [00036]. Claim 23 recites at least five sets of facets. In any case, the number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape. The large number of rows of facets is necessary to yield the dome-shaped crown capable of receiving and reflecting more light.

Appellant maintains that Stafford's gemstone is not dome-shaped with monotonically decreasing angles to form a curved

contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Stafford discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 23. The additional sets of facets recited in claim 23, over and above what is shown in Stafford, go toward forming the curved contour in accordance with its dome shape. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape.

Appellant further believes that Stafford's gemstone does not show each facet within the first and second sets of facets is hexagonal in shape with opposing corners of the hexagon nested between adjacent facets. Stafford's facets are rectangular, not hexagonal, and cannot be reasonably viewed as having opposing corners of the hexagon nested between adjacent facets.

The Examiner states that change in number and shape of facets merely alters the aesthetics of the gemstone and would thus be obvious over Stafford. Appellant disagrees. The larger number of facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The dome-shape is functional to achieve the fluid balance of light return from the numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. The hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets add to the light angles and light return. It is the totality and utility of these functional aspects of the dome-shaped crown that allows more light to be received and reflected by the gemstone,

thus providing greater the brilliance and scintillation, see paragraph [00036].

Appellant's invention as recited in claim 23 is believed to be significantly different than the Stafford reference. The Examiner acknowledges that Stafford does not show all features of claim 1. Appellant believes the Examiner is taking judicial notice by failing to produce any prior art reference that demonstrates how the differences between claim 23 and Stafford would be obvious. Claim 23 recites sufficient facets and an apex which has less surface area than each facet from the sets of facets to form a curved contour into a dome shape, see also FIGs. 5 and 8. In one embodiment, the specification discusses cutting at least eleven rows of facets to achieve the curved contour into a dome shape, see paragraphs [00027]-[00029]. Claim 23 further recites hexagon-shaped facets with opposing corners of the hexagon nested between adjacent facets. Stafford simply does not have these features.

Accordingly, claim 23 is believed to patentably distinguish over Stafford. Claims 24-25 are believed to be in condition for allowance as each is dependent from an allowable base claim.

Claim 56 depends from claim 23 and further recites the apex of the crown as having less surface area than each facet from the sets of facets. Stafford does not have an apex of the dome-shaped crown which has less surface area than each facet from the sets of facets. The top of the gemstone in Stafford is a table-top with a surface area larger than the adjacent facets. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape. The apex of the dome-shaped crown has less surface area than each

facet from the sets of facets in order to create the dome-shape, which is not found in Stafford.

Accordingly, claim 56 is believed to patentably distinguish over Stafford.

4. Claim 41

Claim 41 is believed to be in condition for allowance as it is dependent from an allowable base claim.

5. Claims 44-46

Claim 44 depends from claim 40 and further recites that the dome-shaped crown is formed from at least five sets of facets with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

Appellant generally disagrees with the Examiner that Stafford discloses a dome-shaped crown, at least not one formed with a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater the brilliance and scintillation, see paragraph [00036]. Claim 44 recites at least five sets of facets. The number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape.

Appellant maintains that Stafford's gemstone is not dome-shaped with monotonically decreasing angles to form a curved

contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Stafford discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 44. The additional sets of facets recited in claim 44, over and above what is shown in Stafford, go toward forming the curved contour in accordance with its dome shape. The larger number of facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The dome-shape is functional to achieve the fluid balance of light return from the numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. It is the totality and utility of these functional aspects of the dome-shaped crown that allows more light to be received and reflected by the gemstone, thus providing greater the brilliance and scintillation, see paragraph [00036].

Accordingly, claim 44 is believed to patentably distinguish over Stafford. Claim 45 is believed to be in condition for allowance as it is dependent from an allowable base claim.

Claim 46 depends from claim 40 and further recites the apex of the crown as having less surface area than each facet from the sets of facets. Stafford does not use an apex of a dome-shaped crown which has less surface area than each facet from the sets of facets. The top of the gemstone in Stafford is a table-top with a surface area larger than the adjacent facets. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape. The apex of the dome-shaped crown has less surface area than each

facet from the sets of facets in order to create the dome-shape, which is not found in Stafford.

Accordingly, claim 46 is believed to patentably distinguish over Stafford.

6. Claims 49-51

Claims 49 and 51 are believed to be in condition for allowance as it is dependent from an allowable base claim.

Claim 50 depends from claim 47 and further recites the apex of the crown as having less surface area than each facet from the sets of facets. Stafford does not use an apex of a dome-shaped crown which has less surface area than each facet from the sets of facets. The top of the gemstone in Stafford is a table-top with a surface area larger than the adjacent facets. The flat table-top apex in Stafford negates reading the prior art reference on the claimed dome-shaped crown because it clearly does not form a curved contour in accordance with a dome shape. The apex of the dome-shaped crown has less surface area than each facet from the sets of facets in order to create the dome-shape, which is not found in Stafford.

Accordingly, claim 50 is believed to patentably distinguish over Stafford.

6. Claim 54

Claim 54 depends from claim 47 and further recites that the dome-shaped crown is formed from at least five sets of facets with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

Appellant generally disagrees with the Examiner that Stafford discloses a dome-shaped crown, at least not one formed with a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

A fundamental aspect of the present invention is its dome-shaped crown. The dome-shaped crown is essential for receiving and reflecting more light by the gemstone to produce greater the brilliance and scintillation, see paragraph [00036]. Claim 54 recites at least five sets of facets. The number of rows of facets must be sufficient to form a curved contour in accordance with a dome shape.

Appellant maintains that Stafford's gemstone is not dome-shaped with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown. Stafford discloses at most three sets of facets from the girdle to the apex of the crown which is insufficient to create a curved contour in accordance with a dome shape as recited in claim 54. The additional sets of facets recited in claim 54, over and above what is shown in Stafford, go toward forming the curved contour in accordance with its dome shape. The larger number of facets is essential to formation of the dome-shaped crown cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape. The dome-shape is functional to achieve the fluid balance of light return from the numerous angles and does indeed produce a novel and non-obvious result, see paragraph [00029]. It is the totality and utility of these functional aspects of the dome-shaped crown that allow more light to received and reflected by the gemstone, thus providing greater the brilliance and scintillation, see paragraph [00036].

Accordingly, claim 54 is believed to patentably distinguish over Stafford.

F. Claims 7-8, 10, 18-19, 21, 27-28, 30, 42-43, and 52-53 are patentable over Stafford in view of Almaraz

1. Claims 7, 8, and 10

Claim 7 depends from claim 1 and further recites a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown, and a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

The Examiner rejects claim 7 as being obvious of Stafford in view of Almaraz. Appellant objects to the Almaraz reference as being completely unrelated and nonanalogous prior art. There is absolutely no motivation or teaching to combine the references because Appellant submits that one of skill in the art of diamond cutting would not look to hubcaps for design ideas for diamonds and cut gemstones. But even if Almaraz is combined with Stafford, there still is no mention of the recited cut angles, i.e., there is no express or implied teaching or suggestion in Stafford or Almaraz, taken singularly or in combination, for first and second sets of facets cut to 90 degrees and 75 degrees, respectively. The claimed angles form a portion of the dome-shaped crown having a curved contour in accordance with the dome shape. Hence, Appellant believe the Examiner is taking judicial notice by failing to produce any

prior art reference that demonstrates how the differences between claim 7 and Stafford in view of Almaraz would be obvious. Nonetheless, claim 7 distinguishes from Stafford for at least the same reasons given for claim 1.

Accordingly, claim 7 is believed to patentability distinguish over the Stafford and Almaraz references, taken singularly or in combination.

Claim 8 depends from claim 7 and further recites a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line, a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line, and a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

The Examiner rejects claim 8 as being obvious of Stafford in view of Almaraz. Appellant objects to the Almaraz reference as being completely unrelated and nonanalogous prior art. There is absolutely no motivation or teaching to combine the references because Appellant submits that one of skill in the art of diamond cutting would not look to hubcaps for design ideas for diamonds and cut gemstones. But even if Almaraz is combined with Stafford, there still is no mention of the recited cut angles, i.e., there is no teaching or suggestion in Stafford or Almaraz, taken singularly or in combination, for three sets of facets cut to 65 degrees, 55 degrees, and 45 degrees, respectively. The claimed angles form a portion of the dome-shaped crown having a curved contour in accordance with the dome shape. Hence, Appellant believes the Examiner is taking

judicial notice by failing to produce any prior art reference that demonstrates how the differences between claim 8 and Stafford in view of Almaraz would be obvious. Nonetheless, claim 8 distinguishes from Stafford for at least the same reasons given for claim 1.

Accordingly, claim 8 is believed to patentably distinguish over the Stafford and Almaraz references, taken singularly or in combination.

Claim 10 is believed to patentably distinguish over the Stafford and Almaraz references, taken singularly or in combination, for similar reasons as claim 8.

2. Claims 18-19, 21, 27-28, 30, 42-43, and 52-53

Claims 18, 19, and 21 are believed to be allowable for the same reasons given for claims 7, 8, and 10.

Claims 27 and 28 are believed to be allowable for the same reasons given for claims 7 and 8.

Claim 30 has been cancelled.

Claims 42 and 43 are believed to be allowable for the same reasons given for claims 7 and 8.

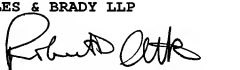
Claims 52 and 53 are believed to be allowable for the same reasons given for claims 7 and 8.

VIII. CONCLUSION

When properly considered in view of the applicable legal standard, claims 1, 3-5, 7, 8, 10, 13-16, 18-19, 21, 23-25, 27, 28, and 40-56 are believed to be patentable in view of the prior art of record. Appellant requests reversal of the final rejection and allowance of the subject patent application.

Respectfully submitted,
QUARLES & BRADY LLP

May 4, 2007

By: 
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Claims Appendix

1. (Previously presented) A diamond, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet, each of the plurality of facets having a continuous flat surface extending from the girdle to the culet, wherein an edge of a first adjoining facet contacts an edge of a second adjoining facet along a common radial boundary; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, each facet within the sets of facets being hexagonal in shape with opposing corners of the hexagon nested between adjacent facets, each of the sets of facets having monotonically decreasing surface area from the girdle to the apex of the dome-shaped crown, the apex of the dome-shaped crown having less surface area than each facet from the sets of facets.

2. (Cancelled)

3. (Previously presented) The diamond of claim 1, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees.

4. (Original) The diamond of claim 1, wherein the plurality of facets of the pavilion totals at least sixteen in number.

5. (Original) The diamond of claim 1, wherein the pavilion is substantially conical in shape.

6. (Cancelled)

7. (Previously presented) The diamond of claim 1, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

8. (Previously presented) The diamond of claim 7, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

9. (Cancelled)

10. (Previously presented) The diamond of claim 7, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 56 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 46 degrees with respect to the reference line.

11. (Cancelled)

12. (Cancelled)

13. (Previously presented) A cut gemstone, comprising:

a pavilion extending from a girdle to a culet, wherein the girdle extends no further than a widest circumference of the crown and the pavilion extends no further than a widest circumference of the girdle; and

a crown in the form of a symmetrical hemisphere formed from at least five sets of facets between the girdle and an apex of the crown including a first set of facets disposed above the girdle and a second set of facets disposed between the first set of facets and an apex of the crown, wherein the first set of facets is cut at a first angle with respect to a reference line which is tangential to the apex of the crown and the second set of facets is cut at a second angle with respect to the reference line which is less than the first angle, each facet within the

first and second sets of facets being hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

14. (Original) The cut gemstone of claim 13, wherein each of the plurality of facets of the pavilion are symmetrically disposed and extend continuous from the girdle to the culet.

15. (Original) The cut gemstone of claim 14 wherein each of the plurality of facets of the pavilion are cut to an angle of about 40.75 degrees with respect to the reference line.

16. (Original) The cut gemstone of claim 13, wherein the plurality of facets of the pavilion totals at least sixteen in number.

17. (Cancelled)

18. (Original) The cut gemstone of claim 13, wherein the first set of facets is disposed in the crown adjacent to the girdle and cut about 90 degrees with respect to the reference line and the second set of facets is disposed in the crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

19. (Previously presented) The cut gemstone of claim 18, further including:

a third set of facets disposed in the crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

20. (Cancelled)

21. (Previously presented) The cut gemstone of claim 13, further including:

a third set of facets disposed in the crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the crown adjacent to the third set of facets and cut about 56 degrees with respect to the reference line; and

a fifth set of facets disposed in the crown adjacent to the fourth set of facets and cut about 46 degrees with respect to the reference line.

22. (Cancelled)

23. (Previously presented) A cut gemstone, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed

from at least five sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, each facet within the sets of facets being hexagonal in shape with opposing corners of the hexagon nested between adjacent facets.

24. (Original) The cut gemstone of claim 23, wherein each of the plurality of facets of the pavilion are symmetrically disposed and extend continuous from the girdle to the culet.

25. (Original) The cut gemstone of claim 24, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown.

26. (Cancelled)

27. (Previously presented) The cut gemstone of claim 23, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

28. (Previously presented) The cut gemstone of claim 27, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

29-39. (Cancelled)

40. (Previously presented) A cut gemstone, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown, each facet within the sets of facets being polygonal in shape with opposing corners of the polygon nested between adjacent facets.

41. (Previously presented) The cut gemstone of claim 40, wherein the plurality of facets of the pavilion are each cut to an angle of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown.

42. (Previously presented) The cut gemstone of claim 40, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

43. (Previously presented) The cut gemstone of claim 40, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

44. (Previously presented) The cut gemstone of claim 40, wherein the dome-shaped crown is formed from at least five sets of facets with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

45. (Previously presented) The cut gemstone of claim 40, wherein the polygon is a hexagon.

46. (Previously presented) The cut gemstone of claim 40, wherein the apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

47. (Previously presented) A diamond, comprising:

a pavilion having a plurality of facets disposed from a girdle to a culet; and

a dome-shaped crown disposed above the girdle, wherein the girdle extends no further than a widest circumference of the dome-shaped crown and the pavilion extends no further than a widest circumference of the girdle, the dome-shaped crown formed from a plurality of sets of facets cut with monotonically decreasing angles to form a curved contour in accordance with a dome shape from the girdle to an apex of the dome-shaped crown.

48. (Previously presented) The diamond of claim 47, wherein each facet within the sets of facets is polygonal in shape with opposing corners of the polygon nested between adjacent facets.

49. (Previously presented) The diamond of claim 47, wherein the polygon is a hexagon.

50. (Previously presented) The cut gemstone of claim 47, wherein the apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

51. (Previously presented) The diamond of claim 47, wherein the plurality of facets of the pavilion are each cut to an angle

of about 40.75 degrees with respect to the reference line which is tangential to the apex of the dome-shaped crown.

52. (Previously presented) The diamond of claim 47, further including:

a first set of facets disposed in the dome-shaped crown adjacent to the girdle and cut about 90 degrees with respect to a reference line which is tangential to the apex of the dome-shaped crown; and

a second set of facets disposed in the dome-shaped crown adjacent to the first set of facets and cut about 75 degrees with respect to the reference line.

53. (Previously presented) The diamond of claim 51, further including:

a third set of facets disposed in the dome-shaped crown adjacent to the second set of facets and cut about 65 degrees with respect to the reference line;

a fourth set of facets disposed in the dome-shaped crown adjacent to the third set of facets and cut about 55 degrees with respect to the reference line; and

a fifth set of facets disposed in the dome-shaped crown adjacent to the fourth set of facets and cut about 45 degrees with respect to the reference line.

54. (Previously presented) The diamond of claim 47, wherein the dome-shaped crown is formed from at least five sets of facets with monotonically decreasing angles to form the curved contour in accordance with the dome shape.

55. (Previously presented) The cut gemstone of claim 13, wherein the apex of the crown has less surface area than each facet from the sets of facets.

56. (Previously presented) The cut gemstone of claim 23, wherein the apex of the dome-shaped crown has less surface area than each facet from the sets of facets.

Evidence Appendix

No evidence has been submitted pursuant to 37 C.F.R. § 1.130, 1.131, or 1.132, or entered by the Examiner and relied upon by Appellant in the appeal.

Related Proceedings Appendix

Appellant currently has an appeal pending for related application number 10/613,281 ('281 appeal). No decision by the Board has been made on the '281 appeal. With the exception of the above related application currently on appeal, neither Appellant, nor Assignee or Appellant's legal representative are aware of any other appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Drawings Appendix

No drawings are being submitted with this Appeal Brief.